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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/596,275	01/03/2007	Yasutaka Kono	NEC DP-1058	4793
27667	7590	06/24/2009	EXAMINER	
HAYES SOLOWAY P.C. 3450 E. SUNRISE DRIVE, SUITE 140 TUCSON, AZ 85718			DAVIS, PATRICIA A	
			ART UNIT	PAPER NUMBER
			1795	
			MAIL DATE	DELIVERY MODE
			06/24/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/596,275	KONO ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	PATRICIA DAVIS	1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 09 April 2009.

2a) This action is **FINAL**.                    2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 2,3,5 and 19-24 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 2,3,5, and 19-24 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \* c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____ .
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)	5) <input type="checkbox"/> Notice of Informal Patent Application
Paper No(s)/Mail Date _____ .	6) <input type="checkbox"/> Other: _____ .

**DETAILED ACTION**

1. The Applicant's amendment filed on April 9, 2009 was received. Claims 1, 3, and 6-18 were cancelled. Claims 2 and 4 were previously presented. Claims 19-24 were added.
2. The text of those sections of Title 35, U.S.C. code not included in this action can be found in the prior Office Action issued on April 9, 2009.

***Claim Rejections - 35 USC § 103***

3. Claims 2, 4, 5 and 19-24 are rejected under U.S.C. 35 103(a) as being unpatentable over Yamauchi et al. (US 2004/0013928) in view of Hirsch et al. (US 2004/0209133).

Regarding claim 2, Yamauchi discloses a fuel cell system comprising a fuel container (64) and a partition board (61) comprising a gas liquid separator membrane (67) disposed in part or whole of partition board. See paragraph 89 and figures 6, 7a, 7b, and 7c. The container (64) separates the liquid fuel (60b) from fuel gas (60a). See paragraph 89. However, Yamauchi does not disclose a shutter disposed within the fuel cartridge.

Hirsch discloses a shutter (400) that is disposed within a fuel tank near the methanol delivery film (MDF; separation film). Hirsch further discloses that the shutter could be readily adaptable to other variations of the fuel cell system, such as between the MDF (separation film) and the membrane electrode assembly (see fig. 2). See

paragraph 57. It is further disclosed by Hirsch that the shutter assembly (400) can have a maximum and intermediate settings employed to control the delivery of a fuel to a desired rate depending on the conditions of the fuel cell. See paragraph 56. With this being said it is the position of the examiner that the shutter adjusts a degree of exposure of the gas-liquid separation membrane, given that the shutter located in the fuel container disclosed by Yamauchi and Hirsch and the instant application operates in a similar function as the instant application. Therefore, it would have been obvious to one having ordinary skill in the art to utilize the shutter in the fuel container of Yamauchi to adjust the amount exposure of the gas-liquid separation film.

Regarding claim 4, Yamauchi discloses a pipe (discharge port) (66) that discharge gas to the outside. See paragraph 89.

Regarding claim 5, Yamauchi discloses a check valve (65) (amount adjusts mechanism) that discharges gas to the outside through the pipe (66) (discharge port). See paragraph 89 and figure 6.

Regarding claim 19, Yamauchi discloses a fuel cell system comprising a fuel container (64) and a partition board (61) comprising a gas liquid separator membrane (67) disposed in part or whole of partition board. See paragraph 89 and figures 6, 7a, 7b, and 7c. The container (64) separates the liquid fuel (60b) from fuel gas (60a). See paragraphs 88-91. The container (64) separates into a gas compartment (60a) and a liquid compartment (60b) which allows which has a partition to allow gas to pass through. It is inherent that that the liquid fuel housing chamber (64) would have to have

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a fixed volume because of the predetermined shape. However, Yamauchi does not disclose a shutter disposed within the fuel cartridge.

Hirsch discloses a shutter (400) that is disposed within a fuel tank near the methanol delivery film (MDF; separation film). Hirsch further discloses that the shutter could be readily adaptable to other variations of the fuel cell system, such as between the MDF (separation film) and the membrane electrode assembly (see fig. 2). See paragraph 57. It is further disclosed by Hirsch that the shutter assembly (400) can have a maximum and intermediate settings employed to control the delivery of a fuel to a desired rate depending on the conditions of the fuel cell. See paragraph 56. With this being said it is the position of the examiner that the shutter adjusts a degree of exposure of the gas-liquid separation membrane, given that the shutter located in the fuel container disclosed by Yamauchi and Hirsch and the instant application operates in a similar function as the instant application. Therefore, it would have been obvious to one having ordinary skill in the art to utilize the shutter in the fuel container of Yamauchi to adjust the amount exposure of the gas-liquid separation film.

Regarding claim 20, Yamauchi discloses a pipe (discharge port) (66) that discharge gas to the outside. See paragraph 89.

Regarding claim 21, Yamauchi discloses a check valve (65) (amount adjusts mechanism) that discharges gas to the outside through the pipe (66) (discharge port). Yamauchi further discloses that at a slightly elevated point of internal pressure, the gas can be discharged outside. See paragraph 89 and figure 6.

Regarding claim 22, Yamauchi discloses a fuel cell system comprising a fuel container (64) and a partition board (61) comprising a gas liquid separator membrane (67) disposed in part or whole of partition board. See paragraph 89 and figures 6, 7a, 7b, and 7c. The container (64) separates the liquid fuel (60b) from fuel gas (60a). See paragraphs 88-91. The container (64) separates into a gas compartment (60a) and a liquid compartment (60b) which allows which has a partition to allow gas to pass through. It is inherent that that the liquid fuel housing chamber (64) would have to have a fixed volume because of the predetermined shape. However, Yamauchi does not disclose a shutter disposed within the fuel cartridge or that the fuel cell cartridge is detachable from the fuel cell. The Courts have held that making known elements separable is within the skill of a person of ordinary skill in the art. See *In re Dulberg*, 129 USPQ 348 (CCPA 1961) (see MPEP § 2144.04).

Hirsch discloses a shutter (400) that is disposed within a fuel tank near the methanol delivery film (MDF; separation film). Hirsch further discloses that the shutter could be readily adaptable to other variations of the fuel cell system, such as between the MDF (separation film) and the membrane electrode assembly (see fig. 2). See paragraph 57. It is further disclosed by Hirsch that the shutter assembly (400) can have a maximum and intermediate settings employed to control the delivery of a fuel to a desired rate depending on the conditions of the fuel cell. See paragraph 56. With this being said it is the position of the examiner that the shutter adjusts a degree of exposure of the gas-liquid separation membrane, given that the shutter located in the fuel container disclosed by Yamauchi and Hirsch and the instant application operates in

a similar function as the instant application. Therefore, it would have been obvious to one having ordinary skill in the art to utilize the shutter in the fuel container of Yamauchi to adjust the amount exposure of the gas-liquid separation film.

Regarding claim 23, Yamauchi discloses a pipe (discharge port) (66) that discharge gas to the outside. See paragraph 89.

Regarding claim 24, Yamauchi discloses a check valve (65) (amount adjusts mechanism) that discharges gas to the outside through the pipe (66) (discharge port). See paragraph 89 and figure 6.

### ***Response to Arguments***

5. Applicant's arguments filed on April 9, 2009 have been fully considered but they are not persuasive.

*Applicant's principal arguments are*

*(a) that one of ordinary skill in the art would not look to combine Yamauchi and Hirsch;*

*(b) that Yamauchi is structurally different from Applicant's claimed invention.*

In response to Applicant's arguments, please consider the following comments:

*(a) one of ordinary skill in the art would find it applicable to incorporate the shutter structure of Hirsch with Yamauchi since it would still be able to control the fuel flow in the fuel cell system.*

(b) Yamauchi teaches the same structure as Applicant's where a container separates the gas and liquid with a separator membrane, which would be able to perform the same functions as the Applicant's.

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PATRICIA DAVIS whose telephone number is (571)270-

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7868. The examiner can normally be reached on 7:30am-5pm EST. Monday-Friday, alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dah-Wei Yuan can be reached on 571-272-1295. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/PATRICIA DAVIS/  
Examiner, Art Unit 1795

/Dah-Wei D. Yuan/  
Supervisory Patent Examiner, Art Unit 1795